

5. Descriptions of some new or little-known Butterflies from India, with some Notes on the Seasonal Dimorphism obtaining in the Genus *Melanitis*. By LIONEL DE NICÉVILLE, F.E.S.

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(Plates XXXIX. & XL.)

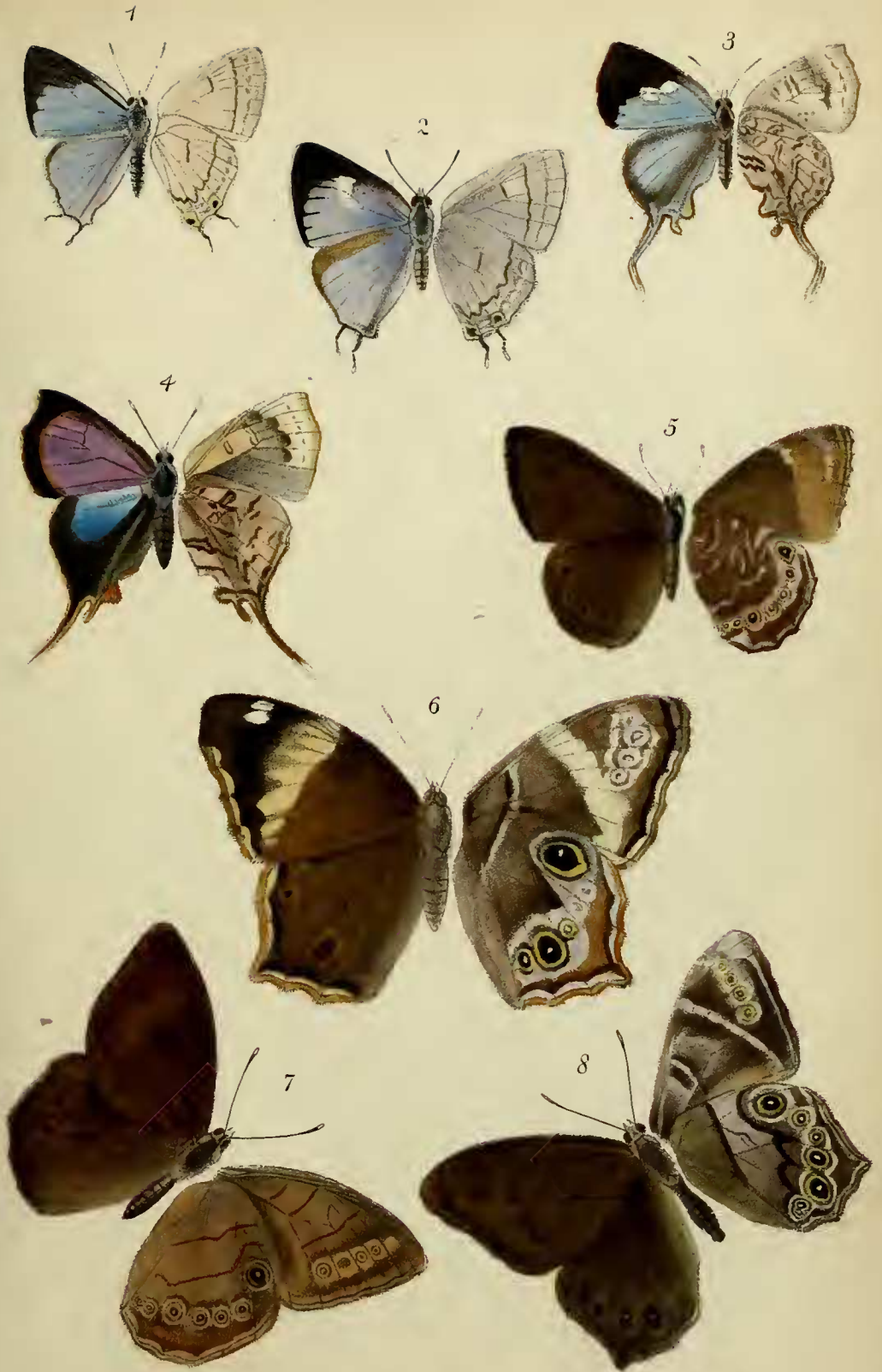
LETHE NICETELLA, n. sp. (Plate XXXIX. fig. 5, ♂.)

*Hab.* Sikkim.

*Expanse.* ♂ ♀ 1·8 to 2 inches.

MALE. UPPERSIDE: *both wings* brown, with a brilliant golden-bronzy sheen when fresh, the outer margins with a regular band of the ground-colour devoid of this gloss. *Fore wing* with a short obscure ochreous subapical fascia at the bifurcation of the fourth and fifth subcostal nervules. *Hind wing* with a submarginal series of five round black spots with pale outer rings, of which the second from the apex is the largest, the uppermost and the fourth subequal, and the next largest, the third the smallest, though but little smaller than the fifth or anal. UNDERSIDE: *both wings* paler than above. *Fore wing* with an obscure dark bar across the middle of the cell, an oblique discal band beyond the cell, prominent at the costa, becoming obsolete towards the anal angle, beyond this band the ground-colour is abruptly paler; the subapical fascia as on the upperside, but more extended violet-white; two marginal fine dark lines enclosing a line of the ground-colour, the inner one defined with a somewhat coarser pale line, all these lines extending from the second median nervule to the apex. *Hind wing* with two basal and two discal highly irregular violet lines, the one furthest from the base with an irregular dark brown fascia placed outwardly against it; the discocellular nervules defined on both sides with a fine violet line; a submarginal series of six ocelli, the first, second (usually), fifth, and geminated sixth composed of a black centre with a pure white pupil, an ochreous, a dark brown, and an outer violet ring; the second (occasionally), third, and fourth ocelli composed of a small dark brown centre with a violet pupil, a violet, a dark brown, and an outer violet ring; marginal lines as in the fore wing, but the innermost line violet, very prominent towards the anal angle. *Cilia* cinereous, dark brown at the ends of the veins.—FEMALE. UPPERSIDE: *both wings* paler. *Fore wing* with the discal band of the underside showing through. UNDERSIDE: *both wings* also paler.

*L. nicetella* may be known from *L. nicetas*, Hewitson, from Kulu and Sikkim, on the underside of the fore wing in both sexes by not possessing three small subapical ocelli divided by the discoidal nervules, and in the discal band being much less prominent (in *L. nicetas* it is broadly outwardly defined with ochreous); in the hind wing in having at least two and often three of the ocelli with small dark brown instead of deep black centres (in *L. nicetas* all the ocelli are







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NEW INDIAN BUTTERFLIES

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similarly formed), and in the outer discal violet line having a dark brown fascia placed against it (in *L. nicetas* this fascia is much more deeply scalloped and of a rich ochreous colour).

I have described *L. nicetella* from a large series of males and a single female collected in Sikkim by Mr. Otto Möller. In Sikkim, judging from the number of specimens before me of each species, *L. nicetella* is much the commoner of the two.

LETHE TAMUNA, n. sp. (Plate XXXIX. fig. 6, ♀.)

*Hab.* Little Nicobar.

*Expanse.* ♀ 2·7 inches.

**FEMALE.** **UPPERSIDE:** *both wings* dull dark fulvous. *Fore wing* with the apical half fuscous, bearing two pure white spots below the costa, placed midway between the apex and the median ochreous band, the upper of the two spots much the smaller, and divided into two portions by the fourth subcostal nervule; below these spots in the upper discoidal interspace is an obscure oval black spot; near the margin are four bright ochreous lunules placed between the veins from the lower discoidal nervule to the inner angle, beyond these lunules in each interspace is a fine ochreous line; across the disk of the wing, from the middle of the costa to near the inner angle, is a broad bright ochreous band, its inner edge nearly straight and even, its outer edge produced into points between the veins, the lower portion of the band composed of two spots (the lower one very small) in the submedian interspace. *Hind wing* with the ocelli of the underside more or less showing through by transparency; a series of bright ochreous lunules with inner dark borders placed near the outer margin between the veins, with a darker ochreous line beyond. **UNDERSIDE:** *both wings* dull brown. *Fore wing* with a whitish subbasal line crossing the middle of the discoidal cell from the subcostal to the submedian nervule; the broad discal band as above, but with its edges more even and wider at its lower end; beyond it are four ill-shaped ocelli with black pupils dotted with white, a pale violet ring, then a browner ring and an outer pale violet ring; the margin marked much as above. *Hind wing* with a subbasal line in continuation of that on the fore wing, not reaching the abdominal margin; a discal series of ocelli placed on a pale violet band, which more or less follows their outline; the upper ocellus very large, its centre deep black dotted with white, then a broad rich ochreous ring, outwardly defined with a fuscous ring; the next largest ocellus is in the first median interspace, with two small, equal-sized ocelli in the interspaces above and below it, and two very small and indistinct ocelli divided by the discoidal nervule; the bright ochreous lunules on the margin of the upperside white, almost silvery, on the underside.

*Lethe tamuna* is a local form of the widely-distributed *L. europa*, Fabricius, which occurs in the Andamans (but is replaced apparently in the Nicobars by the species under notice), almost throughout India (though not in Ceylon), the Malay peninsula and islands, and has been recorded from China. *L. tamuna* ♀ may be at once

distinguished from the same sex of *L. europa* by its more tawny coloration on the upperside, the discal band bright ochreous instead of white, with its outer edge more irregular, and by the underside of the hind wing having four well-formed perfect ocelli; in *L. europa* the black middle portion of all the ocelli except the upper one is entirely disintegrated and broken up into black dots.

Mr. E. H. Man obtained a single specimen of this interesting species on Little Nicobar.

LETHE GULNIHAL, n. sp. (Plate XXXIX. fig. 7, ♂.)

*Hab.* Bhutan.

*Expanse.* ♂ 2.45 inches.

MALE. UPPERSIDE: *both wings* dark brown, with a distinct rich vinous gloss. *Fore wing* unmarked, except that the narrow discal band of the underside shows through paler on the upperside, the wing being somewhat paler beyond. *Hind wing* with the four middle ocelli of the underside showing through indistinctly. UNDERSIDE: *both wings* dull brown without any vinous gloss. *Fore wing* with a short narrow ferruginous line across the middle of the cell, another similar one towards its end, the lower discocellular nervule marked with ferruginous; a slightly outwardly-curved discal line from the subcostal nervure to just below the first median nervule, beyond which are four somewhat obscure small perfect ocelli placed between the nervules from the upper discoidal to the first median nervule; a fine dark brown marginal line bordered on either side with paler and an anteciliary similar dark line. *Hind wing* with a pair of narrow ferruginous lines across the disk from the costal to the submedian nervure, the outer one very irregular; the lower discocellular nervule marked with ferruginous; a series of six small distinct perfect ocelli composed of a black centre with a white pupil, a yellow, a black, and lastly a pale violet ring; the upper ocellus out of line, placed furthest from the margin and the largest, the three following subequal, the fifth a little larger, but not so large as the first, the sixth the smallest of all and geminate; two fine dark marginal lines enclosing a fine ochreous line, the inner one inwardly defined with pale lunules.

The secondary sexual characters ("male marks") of *L. gulnihal* are very peculiar and interesting. On the upperside of the hind wing it possesses the tuft of long black hair which is found in *L. scanda*, *L. bhairava*, *L. latiaris*, *L. minerva*, *L. sihala*, and *L. dynsate*; in addition it has a large oval patch of deep black lustrous scales, which is bounded above by the first subcostal nervule, partially inwardly and beneath by that portion of the subcostal nervure between the bases of the first subcostal and discoidal nervules, the patch not nearly reaching the margin (this feature occurs in *L. bhairava* in a somewhat modified form); lastly, the inner margin of the fore wing is deeply outwardly bowed, which is a unique feature, the bowed portion beneath the submedian nervure clothed with differently formed and modified scales to those on the rest of the wing, this portion of the wing being clearly defined on

the underside by a large deep black oval patch. In *L. bhairava* there is a large patch of black scales on the inner margin of the fore wing on the upperside, but it extends into the submedian interspace. *L. gulnihal* is nearest to *L. bhairava*, its markings being very similar; but it is smaller, and the bowed inner margin of the fore wing will at once distinguish the males of the two species.

Two male specimens have been obtained in Bhutan by the native collectors of Messrs. Otto Möller and A. V. Knyvett, in whose collections the specimens above described are deposited.

LETHE BRISANDA. (Plate XXXIX. fig. 8, ♂.)

*L. brisanda*, de Nicéville, Journ. A. S. B. vol. lv. pt. ii. p. 249. n. 1, pl. xi. fig. 13, *female* (1886).

*Hab.* Bhutan.

*Expanse.* ♂ 2·4 inches.

MALE. Differs from fresh native Sikkim specimens of *L. dinarbas* on the UNDERSIDE of the *fore wing* in the lilac band across the middle of the discoidal cell being much narrower, with uneven instead of straight edges; the discal oblique band lilac throughout, straight, and of equal width throughout (in *L. dinarbas* the upper portion of the band only is lilac, this portion too in that species being wider); in having an additional ocellus in the subcostal interspace (in a long series of *L. dinarbas* before me there are always three ocelli only). On the *hind wing* the discal bands are deep brown instead of ferruginous, and the lilac washings throughout much more brilliant.

Should the above-given characters prove constant in a large series of specimens, the males of *L. brisanda* and *L. dinarbas* will be easily distinguishable, the latter species being apparently very uniformly marked. The females are abundantly distinct.

A single male has been obtained near Buxa, Bhutan, by Mr. A. V. Knyvett's native collectors.

MELANITIS BETHAMI, n. sp.

*Hab.* Pachmarhi, Central Provinces, 3500 feet.

*Rainy-season form.*

*Expanse.* ♂ 2·8, ♀ 3 inches.

MALE. UPPERSIDE: *both wings* sooty black. *Fore wing* with the outer margin paler, the apex very slightly truncate, there being a small notch only below the lower discoidal nervule, a well-defined subcostal nearly round ochreous patch beyond the cell divided into three portions by the discoidal nervules. *Hind wing* unmarked. UNDERSIDE: *both wings* paler than above, densely and evenly striated with darker, the outer margin ferruginous. *Fore wing* with four small obscure discal ocelli, of which the two in the second median and upper discoidal interspaces are the largest. *Hind wing* with a series of six submarginal ocelli, the second from the apex minute, the anal one geminated, the other four subequal and much



larger.—FEMALE. UPPERSIDE: *both wings* much paler than in the male. *Fore wing* slightly more truncate than in the male, with the whole apical third of the wing ochreous, on which is placed a round black spot with a white centre in the second median interspace, with one small obsolete ocellus in the interspace below and three above it. *Hind wing* with the outer margin paler, a round black spot with a white centre in the first median interspace. UNDERSIDE: *both wings* with the ground-colour pale purplish, thickly striated with brown. *Fore wing* with an obscure ochreous fascia before the middle of the wing, a more prominent discal one from just beyond the middle of the costa directed towards the anal angle, which it does not reach; the ocelli as in the male, but rather larger, the outer margin broadly ochreous. *Hind wing* with an outwardly curved discal ochreous fascia, its outer margin sharply defined; the ocelli as in the male; the outer margin broadly ochreous. *Cilia* throughout blackish in both sexes.

*Dry-season form.*

*Expanse.* ♂ 3.3, ♀ 3.2 to 3.3 inches.

MALE. UPPERSIDE: *both wings* deeper black than in the rains form, the outer margins ashy. *Fore wing* highly falcate; with a large rich ochreous, inwardly almost ferruginous, patch, wide at the costa, narrowed to a point at the first median nervule, outwardly banded by the ashy marginal area, and just extending into the apex of the cell. *Hind wing* unmarked, the tail much longer than in the rains form. UNDERSIDE very dark, very irregularly striated; all the ocelli obsolete. *Fore wing* with a large wedge-shaped subapical pale violet patch, behind which are three obscure straight fasciæ composed of pale mottles. *Hind wing* with the basal half of the wing much darker than the outer half, and sharply defined, a patch of ochreous mottles at the end of the cell. The general character of the markings of the underside is similar to that of *M. duryodana*, Felder, and as they show but little variation in a long series of specimens, I have described them somewhat minutely.—FEMALE. UPPERSIDE: *both wings* much paler than in the male, and somewhat purplish, with no distinct outer ashy margin. *Fore wing* even more falcate than in the male, enormously more so than in the corresponding sex of the rains form. The apical two thirds rich ochreous, extending well into the discoidal cell, and reaching the anal angle, enclosing spots as in the female of the rains form, but which, however, so far as the two lower ones are concerned, are variable in size, in one specimen having their black portions much lengthened inwardly; the outer margin just mottled with ashy. *Hind wing* with the outer margin narrowly mottled with ferruginous and ashy, a small submarginal white dot in the first median interspace (sometimes present in the male), sometimes with another smaller one in the interspace above. UNDERSIDE: *both wings* with all the ocelli obsolete and much paler than in the male, being ferruginous-ochreous, fairly evenly covered with blotches of dark brown irrorations; the fasciæ as in the female of the rains form, but blackish

instead of ochreous. The markings of the underside of this sex, too, seem to be fairly constant in a number of specimens.

My recent experiments proving by breeding from the egg that *M. leda* and *M. ismene* are but seasonal forms of one species, and the acquisition of both forms of *M. bethami*, has thrown a flood of light into my mind regarding the Butterflies of this difficult genus. It may now, I think, be accepted as an axiom that in all tropical and subtropical countries in which the year is divided into two well-marked seasons, a dry and a wet, the *Melanites* that occur there will also have two well-marked forms,—a rains form, with slightly falcated fore wing, short tail to hind wing, and prominent ocelli on both wings on the underside; and a dry-season form, which has the fore wing highly falcate, a long tail to hind wing, and obsolete ocelli below. In the 'Lepidoptera of Ceylon,' in addition to *M. leda* and *M. ismene* (one species), Mr. Moore records only *M. tambra*; but in the Indian Museum, Calcutta, is a specimen marked by Mr. Moore himself "*M. suyudana*," which certainly differs from the form Mr. Moore has figured and described as *M. tambra*. I possess in all six specimens of this group from Ceylon, and though they present but slight variation in the size of the ocelli (it should be remembered that Ceylon has a very equable climate throughout the year), there is a well-marked difference in outline, what I should call *M. tambra* being the rains form, and *M. suyudana* the dry-season form. In Sikkim we have, besides *M. leda* and *M. ismene*, *M. zitenius*, of which Herbst has figured the dry-season form and Mr. Distant<sup>1</sup> the rains form; and *M. aswa*, Moore, the strongly ocellated rains form, and *M. bela*, Moore, and *M. duryodana* (the two latter I now believe to be but varieties of one form), the dry-season form of a third species.

An intimate knowledge of the species of *Melanitis* occurring in other parts of the Old World, to be obtained only by living amongst them and carefully noting their different forms and the seasons when they occur, and by breeding them from the egg, would, I feel sure, reveal the fact of the seasonal dimorphism which occurs in all the species of the genus, and I trust that notice being now drawn to the subject, collectors and entomologists will devote attention to it.

To return to *M. bethami*, I have described the rains form from a pair taken on the 8th August, and the dry-season form from five pairs taken between the 15th and 27th October at Pachmarhi, by Mr. J. A. Betham, after whom I have much pleasure in naming the species.

CYLOGENES JANETÆ, n. sp.

*Hab.* Bhutan.

*Expanse.* ♂ 3·5, ♀ 3·55 inches.

MALE. UPPERSIDE: *both wings* deep dull brown, almost black. *Fore wing* with a broad rich ochreous curved subapical band, attenuated towards the anal angle, which it hardly reaches, the rich

<sup>1</sup> Rhopalocera Malayana, p. 412. n. 3, pl. xxxviii. fig. 2, ♂ (1886).

ochreous colour extending along the first median nervule for a short distance; *cilia* black. *Hind wing* with the outer margin somewhat broadly ochreous, sprinkled with dark-brown or blackish irrorations; *cilia* black, tipped with white on the three upper indentations between the veins. **UNDERSIDE:** *both wings* very variegated, the ground-colour apparently being ochreous, thickly irrorated with dark-brown striæ; a discal obscure purplish fascia, inwardly bounded by a dark line. *Fore wing* with three short subcostal bands reaching the middle of the cell, and a broader subapical one, ochreous (these fasciæ are formed by those portions of the ground being free from irrorations), an obscure purplish patch at the apex, an irregular series of five round violet-white spots placed between the veins midway between the cell and the outer margin, the two in the median interspaces large, the other three very small. *Hind wing* with the inner edge of the black discal line marked with an ochreous bar at the costa, the outer margin showing more of the ochreous ground-colour than the rest of the wing; five discal violet-white spots between the veins, the three lower ones large, the two upper small, the lower ones surrounded by a black ring, the spot in the first median interspace the largest of all.—**FEMALE.** **UPPERSIDE:** *fore wing* with the subapical band broader, richer-coloured, and extending along the costa; the black apical patch crossed by yellow veins; the median nervules also marked with yellow near the band. *Hind wing* with the outer margin richer ochreous. **UNDERSIDE** much paler; the darker irrorations far less dense; no trace of the diffused purplish fasciæ.

I have placed this species somewhat doubtfully in the genus *Cyllogenes*, the chief recorded structural character of which is the presence of a large deep black patch in the male, this "sexual mark" being entirely absent in my species, the sexes being practically marked alike. *C. janetæ* is, however, much more closely allied to *C. suradeva*, Moore (hitherto the type and only species in the genus), than to any other described species, the yellow band on the fore wing and the upperside being a striking feature, which is common to both species. On the underside the blind ocellated spots are precisely similar in both species; and the purplish fasciæ on the underside of the male of *C. janetæ* is of the same tint as obtains on the upperside of both sexes of *C. suradeva*. The truncation of the apex of the fore wing in both sexes of *C. janetæ* (more especially in the male) is a good structural character by which to separate the two species in both sexes. It agrees also structurally with *Cyllogenes suradeva* in the almost similar extraordinary character which obtains also in the genus *Parantirrhæa* of Wood-Mason, and which for *Cyllogenes* has not hitherto been noticed, viz.: in the male the three median nervules of the fore wing are considerably further apart at their apices than in the female, owing to the fact that the lower one has to supply the place normally taken by the submedian nervure, as it reaches the outer margin but a very short distance anterior to the anal angle; while the submedian nervure is very short, slightly sinuous, and reaches the inner margin at considerably less than half

the length of the margin from the base. In the female, however, the median nervules and submedian nervure are quite normal, the neuration being very similar to that of *Melanitis*.

Described from two male examples in the collection of Mr. A. V. Knyvett (after whose wife I have named it), and a female in that of Mr. Otto Möller.

#### EUTHALIA DUDA.

*E. duda*, Staudinger, Ex. Schmett. part i. p. 152, pl. liii., *male* (1886).

*Hab.* Near Buxa, Bhutan; Sikkim.

*Expanse.* ♀ 4.5 inches.

**FEMALE.** **UPPERSIDE:** *fore wing* differs from the same sex of *E. durga*, Moore, which also occurs in the same locality, in the four white spots between the veins beyond the discoidal cell being much smaller, their inner ends excavated; the lowest one in the lower discoidal interspace the smallest and most deeply excavated, and shifted outwards, thus breaking the line of the spots; the four spots from the third median nervule to the inner margin also much smaller, the two lower ones with their outer edges highly diffused instead of having them sharply defined. *Hind wing* with the discal white band narrower, its outer edge not defined with a line of the ground-colour as in *E. durga*; its inner edge much more even; the diffused fascia immediately beyond it bluish purple instead of green. **UNDERSIDE:** *fore wing* with the black increasing submarginal band springing posteriorly from the two apical white spots twice as wide; the discal macular band on *both wings* as on the upperside.

A single female of this quite distinct species was obtained by Mr. A. V. Knyvett's native collectors near Buxa.

Since my description was written, I have received Dr. O. Staudinger's work quoted above; and from it I learn that he has described this species from two male specimens from Sikkim, collected many years ago by the late W. S. Atkinson.

#### CATAPECILMA DELICATUM, n. sp.

*C. bubases*, de Nicéville (*nec* Hewitson), Journ. A. S. B. vol. liv. pt. ii. p. 118, pl. ii. figs. 11, *male*, 1, *female* (1885).

Through the kindness of Mr. W. L. Distant in sending me an advance copy of the figure of the true *C. bubases*, Hewitson, which is shortly to appear in the final part of his 'Rhopalocera Malayana,' I am at once enabled to see that Hewitson's description of his species does not apply to the species which occurs in Sikkim, but to which it is somewhat closely allied. When redescribing and figuring this species I was very uncertain whether or no to give it a name, and wrote:—"Hewitson's description of *C. bubases* is very meagre; a comparison of his Malaccan female type with Sikkim specimens may disclose specific differences." This latter conjecture turns out to be a correct one, so I name the Sikkim species *C. delicatum*.

## CHERITRELLA, nov. gen.

FORE WING with the *costal margin* slightly and regularly arched; the *outer margin* highly truncated from the apex to the termination of the third median nervule, this truncated portion, moreover, being concave; below the third median nervule to the inner angle the margin is nearly straight and oblique; *inner margin* straight. *Costal nervure* very short, not nearly reaching to opposite the apex of the cell; the *first, second, and third subcostal nervules* at regular distances apart before the origin of the upper discocellular nervule, the *fourth* springing from the third about the middle of its length; *upper discocellular nervule* directed outwards, *middle and lower* upright and concave; the bases of the *second and third median nervules* half the distance apart of the bases of the second and first; *submedian nervure* straight. HIND WING with the *costal margin* strongly arched at the base, thence to apex nearly straight; *outer margin* to base of long tail at termination of first median nervule straight but waved from thence to anal lobe at right angles; *abdominal margin* strongly convex at base and highly excavated above the anal lobe; a short tail at termination of submedian nervure. *Costal nervure* strongly arched at base, afterwards nearly straight; *first subcostal nervule* originating some little distance before apex of cell, nearly straight; *discocellular nervules* of nearly equal length, concave, outwardly oblique, the origin of the *third median nervule* at the lower end of the cell, the *second* just before its end, that of the *first* being fully four times as distant from that of the second as is the latter from the third; *submedian nervure* nearly straight; *internal nervure* very short, ending on the abdominal margin above the deep excavation, and highly sinuous.

Nearest to *Ticherra*, with which it agrees in having no secondary sexual characters in the male, in the neuration of the hind wing; also in the length and position of the tails, the anal lobe, and the deep excavation above it, but differs from it in the truncation of the fore wing, the costal nervure terminating long before the apex of the cell, and the fourth subcostal nervule springing from the third about its middle instead of considerably nearer the apex.

CHERITRELLA TRUNCIPENNIS, n. sp. (Plate XXXIX. figs. 4, ♂; 3, ♀.)

*Hab.* Sikkim.

*Expanse.* ♂ 1.5 to 1.6, ♀ 1.45 inch.

MALE. UPSERSIDE: *both wings* black. *Fore wing* with all but the costa narrowly, and the outer margin broadly deep dull purple, with a very slight gloss in certain positions. *Hind wing* with a large brilliantly iridescent, rich bright steel-blue<sup>1</sup> patch from the base of the wing, not reaching the outer margin, anteriorly bounded by the costal nervure, extending into the upper portion of the discoidal

<sup>1</sup> Very similar to the colour exhibited in the male of *Jamides bochus*, Cramer, on the upperside, but not quite so brilliant, and more purple in shade rather than blue.

cell and into the upper portion of the second median interspace; the anal lobe and short tail beyond it deep ferruginous; the long tail becoming white towards its termination, pure white at its tip; an obscure round black spot between the bases of the two tails. **UNDERSIDE:** *both wings* umber-brown, *Fore wing* with a darker brown pair of lines across the middle of the discoidal cell, another pair enclosing the discocellular nervules, a discal irregular fascia from the costa to the first median nervule, very broad and dark posteriorly, a submarginal series of dark dots between the veins, the inner margin very broadly pale fuscous without markings. *Hind wing* more or less covered with fuscous, dark brown, and umber fasciæ and spots, the most conspicuous of which are two black spots in the subcostal interspace, a ring-spot at the middle, and an oblong one at the end of the cell, a very dark oblique band from the middle of the abdominal margin to the middle of the wing, a discal irregular fascia recurved upwards to the abdominal margin, and a marginal dark fascia more or less sprinkled with whitish scales towards the anal angle.—**FEMALE.** **UPPERSIDE:** *fore wing* with the purple area in the male replaced by a smaller pale blue patch, leaving the apical half of the wing and the outer margin at the anal angle black, a diffused white spot at the end of the cell and another beyond it divided by the second median nervule into two portions. *Hind wing* also pale blue, all except the costa widely and the outer margin decreasingly, which are black. **UNDERSIDE:** *both wings* paler than in the male, but similarly marked. *Cilia* pale ferruginous throughout.

There are single males of this very beautiful species in the collections of Major Marshall and Messrs. Otto Möller and A. V. Knyvett, and a single female in that of Mr. Möller, all of them taken in Sikkim, Mr. Möller's specimens in June. It is quite unlike any species known to me.

#### TICHERRA, nov. gen.

Closely allied to *Cheritra*, Moore, but differs in the male in the absence of the secondary sexual characters on the costal margin of the hind wing on the upperside; the fourth subcostal nervule of the fore wing springing from the third much nearer its apex, consequently being shorter; the cell of the hind wing longer, the discocellular nervules being much more awkwardly oblique.

Type *Ticherra acte*, Moore.

**TICHERRA ACTE.** (Plate XL. fig. 5, ♂.)

*Myrina acte*, Moore, Horsfield & Moore, Cat. Lep. Mus. E.I. C. vol. i. p. 47. n. 77, *femate* (1857); id. Hewitson, Ill. Diurn. Lep., *Lycænidæ*, p. 30. n. 10, pl. xii. figs. 8, 9, *male*, wet-season form (1863).

*Dry-season form.*

**MALE and FEMALE.** **UNDERSIDE:** *both wings* differ from the typical rainy-season form of the species in the ground-colour being cinnamon-brown instead of rich ochreous-orange; the markings in

the cells and the fine linear discal fasciæ are also much more prominent.

Described from specimens from Sikkim, Assam (Shillong), and the Daffa Hills. I considered these specimens at first to constitute a species distinct from *T. acte*, but Mr. Otto Möller pointed out to me that all his dated specimens with the orange underside were captured in Sikkim during the rainy months, while all those with brown-coloured undersides were taken in either the spring or autumn, so I have but little doubt that this is another case of the extensive seasonal dimorphism which takes place in many of the Lycænidiæ occurring in the oriental tropical and subtropical regions.

*TAJURIA ISTROIDEA*, n. sp. (Plate XL. fig. 3, ♀.)

*Hab.* Sikkim.

*Expanse.* ♀ 1.45 inch.

**FEMALE.** **UPPERSIDE:** *both wings* deep black. *Cilia* greyish fuscous. *Fore wing* with the disk and base rich blue, with hardly any gloss. *Hind wing* with the disk and base also rich blue, outwardly nearly to the margin sprinkled with blue scales between the veins; an anteciliary fine blue line from the anal angle to the third median nervule; anal lobe rufous, with a black centre sprinkled with white scales; tails black, tipped with white. **UNDERSIDE:** *both wings* rufescent or cinnamon-coloured; *cilia* of the colour of the ground. *Fore wing* with a prominent, slightly outwardly curved, discal line of a deeper shade of red than the ground, outwardly defined by brilliant white, this line does not quite touch the costa, and ends posteriorly at the submedian nervure; a submarginal indistinct somewhat macular fascia. *Hind wing* with the discal band as in the fore wing, its upper portion as far as the third median nervule straight, below highly zigzag, and curved upwards to the abdominal margin; the submarginal fascia as in the fore wing, ending in a small round deep black spot, broadly surrounded with ferruginous in the first median interspace; the anal lobe entirely occupied by a large round deep black spot, crowned with a very few greenish-silvery scales; the area between the two spots and beyond the anterior one as far as the third median nervule thickly irrorated with black and white scales; a fine black anteciliary line from the anal angle to the third median nervule, defined on both sides by an equally fine pure white line.

Most nearly allied to *Iolaus ister* of Hewitson<sup>1</sup>, from "India," but differing therefrom in its broader wings, the apex of the fore wing less acute, the outer margin convex, the blue coloration of the upperside deeper and richer in shade and confined to the basal and discal areas of the wings (all these are female characters); the markings of the underside much the same, but the discal line on the fore wing considerably further from the margin, rather less so on the hind wing. I have described this species with some hesitation, solely owing to the fact that Hewitson, in describing *I. ister*, seems

<sup>1</sup> Ill. Diurn. Lep., *Lycænidiæ*, p. 43. n. 13, pl. xix. figs. 15, 16, *female* (1865).

to have gone out of his way to emphasize the fact that his species is a female; judging from his figure alone, I should have said that it was taken from a male, and that my specimen (which is unquestionably a female) was of the opposite sex. The matter must remain in abeyance till some one will examine the sex of Hewitson's type.

Described from a single example in the collection of Mr. Otto Möller.

*TAJURIA ALBIPLAGA*, n. sp. (Plate XXXIX. figs. 1, ♂; 2, ♀.)

*Hab.* Sikkim.

*Expanse.* ♂ 1.5, ♀ 1.6 inch.

**MALE.** UPPERSIDE: *both wings* cerulean blue with hardly any gloss; *cilia* grey throughout. *Fore wing* with the costa bounded posteriorly by the subcostal nervure, the apex broadly (including the anterior portion of the cell) and the outer margin decreasingly to the anal angle black. *Hind wing* with the costal margin and apex light fuscous, the two fine tails black, tipped with white, a fine anteciliary black line. **UNDERSIDE:** *both wings* grey, of the same shade as in *T. jehana*, Moore<sup>1</sup>; a prominent narrow, straight, dark line on the discocellular nervules. *Fore wing* with a similar discal line not reaching the costa anteriorly, touching the submedian nervure posteriorly; beyond this line is a somewhat similar, but indistinct line. *Hind wing* with a discal line much as in the fore wing, but reaching the costa and recurved to the abdominal margin, the upper portion straight as far as the third median nervure, below this the line is formed of outwardly convex lunules; beyond the discal line is an obsolete submarginal line as in the fore wing; a small deep black round spot in the first median interspace, close to the margin and another on the small anal lobe, both outwardly margined with pale yellow; no secondary sexual characters.—**FEMALE** larger, both wings broader, the apex of the fore wing less acute. **UPPER-SIDE:** *both wings* of a slightly darker shade of blue than in the male; *cilia* white throughout. *Fore wing* with a large quadrate diffused white patch on the disk, its inner margin well defined by the discocellular nervules, and that portion of the median nervure between the bases of the first and second median nervules. **UNDERSIDE** marked exactly as in the male.

Near to *Tajuria diaeus*, Hewitson<sup>2</sup>, from Sikkim, but the blue coloration of the upperside is much lighter; the discal line on the underside of the fore wing in *T. diaeus* is much straighter, its edges more even, and it increases in width to the costa, which it quite reaches; the colour of all the lines being somewhat rufous also in that species. In *T. diaeus* female, which sex I have not seen, there is a submarginal band of brown spots on the upperside of the hind wing. *T. albiplaga* is also allied to *T. jehana*<sup>3</sup>, Moore, but the sexes of the former differ considerably, while in the

<sup>1</sup> Proc. Zool. Soc. 1883, p. 529, pl. xlix. fig. 7.

<sup>2</sup> *Iolais diaeus*, Ill. Diurn. Lep., *Lycænidae*, p. 45. n. 17, pl. xx. figs. 27, 28, ♂, 26, ♀ (1865).

<sup>3</sup> Proc. Zool. Soc. 1883, p. 529, pl. xlix. fig. 7.



latter they are described as being nearly alike. The three black marginal spots from the anal lobe on the upperside of the hind wing are also absent in *T. albiplaga* in both sexes.

A single pair of this very distinct species is in Mr. Otto Möller's collection.

*TAJURIA MELASTIGMA*, n. sp. (Plate XL. fig. 1, ♂.)

*Hab.* Sikkim, Nilgiris.

*Expanse.* ♂ 1.5 inch.

**MALE. UPPERSIDE:** *both wings* cerulean blue<sup>1</sup>. *Fore wing* with the costal, the apical half of the wing, and the outer margin decreasingly to the anal angle black; a large quadrate shining black "sexual mark" on the disk, bounded on two sides by the discocellular nervules and the first median nervule. *Hind wing* with the outer margin very narrowly black, widening at the apex; the abdominal margin whitish; the anal lobe and inner tail dull reddish, the outer tail black, both tails tipped with white. **UNDERSIDE:** *both wings* dull pinkish. *Fore wing* with the inner margin somewhat broadly greyish; a discal straight narrow deep Indian-red line, outwardly defined with whitish, from near the costa to the submedian nervure; an extremely obscure pale fascia near the margin. *Hind wing* with the discal line in continuation of that on the fore wing, the portion between the median nervules very irregular, from the third median nervule oblique to the abdominal margin; the anal lobe marked with a rust-red spot, crowned obscurely with orange; a smaller very obscure spot on the first median interspace, between which the ground is obscurely sprinkled with white scales; two indistinct series of dark spots between the veins above the second median nervule on the margin; an anteciliary fine dark line. *Cilia* fuscous throughout. *Body* blue above, pale red below, whitish at the sides.

*T. melastigma* has no secondary male sexual characters between the wings, and so far as I am aware the peculiar shining black quadrate patch on the disk of the fore wing on the upperside is unique amongst Indian Lycænidæ. Judging from Hewitson's figure alone it is closely allied to his *Iolaus ister*, the type of which is from "India," and is a female; *T. melastigma* may be the hitherto unknown opposite sex of that species.

The type and only perfect specimen of *T. melastigma* is in the collection of Mr. Otto Möller. I have received a single male fore wing of this species from Mr. G. F. Hampson, collected in the Nilgiri Hills, South India.

*ZEPHYRUS PAVO*, n. sp. (Plate XL. fig. 11, ♀.)

*Hab.* Bhutan.

*Expanse.* ♀ 1.35 inch.

**FEMALE. UPPERSIDE:** *both wings* black. *Fore wing* with the costa somewhat widely, the apical third of the wing, and the outer

<sup>1</sup> Of almost the exact shade of the common "*Polyommatus*" *cleobis* of Godart.

margin at the anal angle black, the rest of the wing rich peacock-purple; a quadrate spot beyond the end of the cell and an elongated one beyond and below it in the second median interspace, orange. *Cilia* black. *Hind wing* unmarked, the tail tipped with white. *Cilia* white, tipped with black, except at the termination of the veins from the second median to the second subcostal nervule, where the cilia are entirely white. **UNDERSIDE** brownish fuscous. *Fore wing* with the discocellular nervule defined with a white line on each side, an obscure darker broad discal fascia outwardly defined with a narrow white line from the costa to the first median nervule, beyond which the wing is sprinkled with pale violet scales; another dark fascia from near the anal angle, decreasing in width from the inner margin to the third median nervule, where it becomes obliterated, also outwardly defined with a whitish line. *Hind wing* sprinkled almost throughout with pale violet scales; a broad irregularly wedge-shaped discal fascia, free of violet sprinkling, broad on the costa, narrowing to a bluntly rounded point above the anal angle, its margins defined with a fine violet-white line; another similar fascia beyond, inwardly defined with violet-white lunules; two subbasal ring-spots, one of which is with the discoidal cell, and a pair of lines on the abdominal margin, all violet-white; an oval black spot in the first median interspace, surrounded by a deep orange ring; a deep orange patch at the anal angle extending a short distance up the abdominal margin; a fine anteciliary dark line, inwardly defined by a white line.

*Zephyrus pavo* is nearly allied to the *Z. katura* of Hewitson<sup>1</sup>, that species being probably the female of *Z. ataxus*, Doubleday and Hewitson, but differs on the upperside of the fore wing in having the basal area of a richer shade of purple, of greater extent, and not divided by the black veins; on the underside the silvery bands in *Z. katura* are replaced in *Z. pavo* by violet irrorations; they also differ in other minor particulars.

The type specimen is unique, and is deposited in Mr. A. V. Knyvett's collection, by whose native collectors it was obtained near Buxa in Bhutan.

**RAPALA DISTORTA**, n. sp. (Plate XL. fig. 6, ♀.)

*Hab.* Sikkim.

*Expanse.* ♀ 1.6 inch.

**FEMALE. UPPERSIDE:** *both wings* almost black, somewhat paler on the hind wing. *Fore wing* with all but the costa widely, the apex and outer margin still more widely (which are of the ground-colour), rich bluish purple. *Hind wing* with a lengthened discal patch of bluish purple, which occupies the lower half of the discoidal cell and extends beyond it into the discoidal and median interspaces, but does not nearly reach the outer margin. Tail dull ferruginous, tipped with white. **UNDERSIDE:** *both wings* dull ferruginous or cinnamon-coloured, glossed with vinous. *Fore wing* with a narrow

<sup>1</sup> *Dipsas katura*, Hewitson, Ill. Diurn. Lep., *Lycenidæ*, p. 65. n. 4, pl. xxvi. figs. 1, 2, female (1865).

white discal line formed of short lunules between the veins, that portion below the first median nervule shifted inwards; a double submarginal series of short white lines, more diffused than the discal line, placed between the veins, which give the appearance of six increasing spots of the ground-colour defined with white. *Hind wing* with a discal white line as in the fore wing, but much more distorted and irregular; an obscure similar basal line, and a submarginal very dentate one; the area beyond the latter irrorated with whitish, including an obscure rounded ferruginous spot in the first median interspace; a fine white anteciliary line obsolete anteriorly. *Cilia* brownish ferruginous throughout.

Allied to *Rapala amisena*, Hewitson, who describes and figures the female<sup>1</sup>, while Mr. Distant figures the opposite sex<sup>2</sup>, from Singapore. Differs from the same sex of that species, judging from the figure and description only, in having the purple area of the upper-side of the fore wing of less extent and sharply defined (in *R. amisena* it appears to be suffused over nearly the whole wing, with no sharp edges), and on the underside of both wings in the markings being fewer and white throughout, instead of dark fuscous, with no trace of the dull light-blue irroration at the anal angle of the hind wing, with a lunular black spot between the tails, described by Hewitson as occurring in his *Amblypodia amisena*.

Mr. Otto Möller took two female specimens of *R. distorta* on 22nd March, in Sikkim, at about 1500 feet altitude.

NILASERA WIMBERLEYI, n. sp. (Plate XL. fig. 4, ♀.)

*Hab.* South Andaman Isles.

*Expanse.* ♀ 1.65 inch.

**FEMALE. UPSIDE:** *both wings* rich cerulean blue. *Fore wing* with the costa as far as the subcostal nervule, the apex, and outer margin widely black. *Hind wing* with the costal and outer margin less broadly black, that colour ascending a short distance into the blue colour between the veins; tail black, tipped with white. **UNDERSIDE:** *both wings* pale olivaceous. *Fore wing* with a round spot at the base, an oval one at the middle, and a quadrate one at the end of the cell, with a small one between these two latter placed on the subcostal nervule; a spot at the base of the first median interspace, and another quadrate one in the middle of the submedian interspace; a discal regular macular band composed of six conjoined spots from the costa to the first median nervule, its inner edge almost straight, its outer edge scalloped; a submarginal macular band very prominent about its middle: all these markings fuscous, outwardly defined with sordid white; a fine black anteciliary line. *Hind wing* with the usual spots and bands, the chief of which are two series of four round spots, each towards the base, an elongated spot closing the cell, and a much broken discal macular

<sup>1</sup> *Amblypodia amisena*, Hewitson, Cat. Lycænidae B. M. p. 13. n. 62, pl. vii. figs. 74, 78, female (1862).

<sup>2</sup> *Rapala amisena*, Distant, Rhop. Malay. p. 277. n. 1, pl. xxiii. fig. 13, male (1885).

band; all these spots composed of a pale centre, then a narrow black line, outwardly defined with a pale line; beyond the discal macular band is a fuscous diffused fascia, outwardly defined from the abdominal margin to the second median nervule by a pale lunular line; in the next two interspaces the fuscous fascia almost reaches the margin and encloses two of the pale lunules; a series of black marginal lunules between the veins; a fine anteciliary black line; the very small anal lobe with a deep black round spot, with a few obsolete silvery scales crowning it; a few also in the two next interspaces. *Cilia* of the colour of the ground throughout.

Apparently nearest to the *Amblypodia ocrida* of Hewitson<sup>1</sup>, from which it differs in the colour of the upperside, that species being "silvery cerulean blue;" there also appears to be some difference in the details of the markings of the underside.

I have named this species after Mr. R. Wimberley, who captured two specimens of this beautiful species in the South Andamans, together with several other species which had not been previously obtained on those islands, not the least interesting of which is a female specimen of the *Deudorix smilis* of Hewitson, described ambiguously from "East India."

ISOTEINON FLAVALUM, n. sp. (Plate XL. fig. 10, ♂.)

*Hab.* Sikkim.

*Expanse.* ♂ 1.2 inch.

MALE. UPSIDE: *both wings* dark brown. *Fore wing* with three small subapical increasing spots, the upper one minute; a small quadrate spot at the lower outer end of the cell, an elongated one at the base of the second median interspace, a much larger quadrate one below it and placed nearer the base of the wing in the first median interspace, all semitransparent diaphanous ochreous. *Hind wing* with the middle of the disk clothed with long greenish-ochreous hairs. *Cilia* cinereous throughout. UNDERSIDE: *fore wing* also dark brown, the spots as above, the costa narrowly and the apex widely (but not reaching the anal angle or the outer margin) yellow. *Hind wing* yellow throughout except the outer margin, which is increasingly dark brown, widening to the anal angle; a conspicuous though small black spot on the discoidal cell, three small dark-brown ring-spots placed very close together below it, and a fourth minute black spot well separated from the others towards the apex. No secondary male sexual characters. *Head and body* above dark brown, below with *legs* yellow. *Antennæ* black, the club tipped beneath with white.

This pretty and very distinct little species is nearest allied to *Iso-teinson satwa*, mihi<sup>2</sup>, but is abundantly distinct; the underside has no purple washing, and on the hind wing the yellow coloration occupies nearly the entire surface; in *I. satwa* it is confined to the anterior half of the wing.

<sup>1</sup> Ill. Diurn. Lep., *Lycenidæ*, p. 14 b. n. 80, pl. iii. a. figs. 38, 39 (1869); from Mindanao, one of the Philippine Islands.

<sup>2</sup> Journ. A. S. B. vol. lii. pt. 2, p. 86. n. 31, pl. x. fig. 15, *male* (1883).